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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,607	02/27/2002	Kazuhiko Hayashi	15333	7070

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EXAMINER

LEWIS, MONICA

ART UNIT PAPER NUMBER

2822

DATE MAILED: 04/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/085,607	Applicant(s) HAYASHI ET AL.	
	Examiner Monica Lewis	Art Unit 2822	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 January 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 9-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 November 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This action is in response to the election filed January 15, 2004.

#### ***Election/Restrictions***

2. Applicant's election of Group II on 1/15/04 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

#### ***Specification***

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

#### ***Information Disclosure Statement***

5. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

***Drawings***

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: a) 5 (See Figure 1); b) 195a (See Figure 3); c) 32 (See Figure 11); d) 201 (See Figure 12); and e) 29b (See Figure 12I). A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 5-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear what is meant by the following: a) “said other of said lower electrode and said upper electrode acting as the anode” (See Claim 5); and b) “said other of said lower electrode and said upper electrode acting as the cathode” (See Claim 6). In claim 1, it is disclosed that “one of said lower electrode and said upper electrode acting as a cathode, and the other acting as an anode” and then in claims 5 and 6 it states the limitations disclosed above. Claims 7 and 8 depend directly or indirectly from a rejected claim and are, therefore, also rejected under 35 U.S.C. 112, second paragraph for the reasons set above.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as obvious over Nippon (Japanese Publication No. 590055487) in view of Mori et al. (Japanese Patent No. 361134084A).

In regards to claim 1, Nippon discloses the following:

a) the light emitting element including a lower electrode (11), a light emitting material layer (12) including at least a light emitting layer, and an upper electrode (14) having light transparency, which are formed on a substrate (10) in the named order, one of said lower electrode and said upper electrode acting as a cathode, and the other acting as an anode (For Example: See Figure 2).

In regards to claim 1, Nippon fails to disclose the following:

a) light sensor being formed on said light emitting element.

However, Mori et al. ("Mori") discloses a light sensor (50) on a light emitting element (20) (For Example: See Figure 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Nippon to include a light sensor on a light emitting element as disclosed in Mori because it aids in providing miniaturization (For Example: See Abstract).

Additionally, since Nippon and Mori are both from the same field of endeavor method the purpose disclosed by Mori would have been recognized in the pertinent art of Nippon.

In regards to claim 3, Nippon discloses the following:

a) light emitting element is an electro-luminescence element (For Example: See Specification Page 4 Lines 9-27).

11. Claim 2 is rejected under 35 U.S.C. 103(a) as obvious over Nippon (Japanese Publication No. 590055487) in view of Mori et al. (Japanese Patent No. 361134084A) and Zhang et al. (U.S. Publication No. 2003/0025136).

In regards to claim 2, Nippon fails to disclose the following:

a) light sensor is formed on said upper electrode.

However, Zhang et al. ("Zhang") discloses a light sensor (300) on an upper electrode (119) (For Example: See Figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Nippon to include a light sensor on said upper electrode as disclosed in Zhang because it aids in providing an inexpensive manner of manufacturing a display device (For Example: See Paragraphs 4-8).

Additionally, since Nippon and Zhang are both from the same field of endeavor method the purpose disclosed by Zhang would have been recognized in the pertinent art of Nippon.

12. Claim 4 is rejected under 35 U.S.C. 103(a) as obvious over Nippon (Japanese Publication No. 590055487) in view of Mori et al. (Japanese Patent No. 361134084A) and Nikaido et al. (U.S. Patent No. 5,105,238).

In regards to claim 4, Nippon fails to disclose the following:

a) electroluminescence element includes an organic thin film as said light emitting layer included in said light emitting material layer, said organic thin film has a structure emitting the light in response to an applied current.

However, Nikaido et al. ("Nikaido") discloses an electroluminescence element that includes an organic thin film, said organic thin film has a structure emitting the light in response to an applied current (For Example: See Abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Nippon to include an electroluminescence element that includes an organic thin film as disclosed in Nikaido because it aids in providing reducing the fluctuation of the intensity of the light (For Example: See Abstract).

Additionally, since Nippon and Nikaido are both from the same field of endeavor method the purpose disclosed by Nikaido would have been recognized in the pertinent art of Nippon.

13. Claims 5-7, as far as understood, are rejected under 35 U.S.C. 103(a) as obvious over Nippon (Japanese Publication No. 590055487) in view of Mori et al. (Japanese Patent No. 361134084A), Nikaido et al. (U.S. Patent No. 5,105,238) and Terao et al. (U.S. Patent No. 6,133,581).

In regards to claim 5, Nippon fails to disclose the following:

a) a hole injection and transport layer is provided between said light emitting layer and said other of said lower electrode and said upper electrode acting as the anode.

However, Terao et al. ("Terao") discloses a hole injection and transport layer (3h) provided between said light emitting layer (3r) and said other of said lower electrode and said upper electrode acting as the anode (For Example: See Figure 3 and Column 1 Lines 17-31). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Nippon to include a hole injection and transport layer provided between said light emitting layer and said lower electrode and said upper

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electrode as disclosed in Terao because it aids in providing low power consumption (For Example: See Abstract).

Additionally, since Nippon and Terao are both from the same field of endeavor method the purpose disclosed by Terao would have been recognized in the pertinent art of Nippon.

In regards to claim 6, Nippon fails to disclose the following:

a) a hole injection and transport layer is provided between said light emitting layer and said other of said lower electrode and said upper electrode acting as the cathode.

However, Terao discloses a hole injection and transport layer provided between said light emitting layer and said other of said lower electrode and said upper electrode acting as the cathode (For Example: See Figure 17b and Column 1 Lines 17-31). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Nippon to include a hole injection and transport layer provided between said light emitting layer and said lower electrode and said upper electrode as disclosed in Terao because it aids in providing low power consumption (For Example: See Abstract).

Additionally, since Nippon and Terao are both from the same field of endeavor method the purpose disclosed by Terao would have been recognized in the pertinent art of Nippon.

In regards to claim 7, Nippon fails to disclose the following:

a) light sensor includes a pn junction formed by a region formed of a p-type semiconductor and another region formed of an n-type semiconductor.

However, Mori discloses a light sensor that includes a pn junction (For Example: See Abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Nippon to include a light sensor



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includes a pn junction as disclosed in Mori because it aids in providing miniaturization (For Example: See Abstract).

Additionally, since Nippon and Mori are both from the same field of endeavor method the purpose disclosed by Mori would have been recognized in the pertinent art of Nippon.

14. Claim 8, as far as understood, is rejected under 35 U.S.C. 103(a) as obvious over Nippon (Japanese Publication No. 590055487) in view of Mori et al. (Japanese Patent No. 361134084A), Nikaido et al. (U.S. Patent No. 5,105,238), Terao et al. (U.S. Patent No. 6,133,581) and Hamakawa et al. (U.S. Patent No. 4,820,915).

In regards to claim 8, Nippon fails to disclose the following:

a) light sensor includes a pin structure formed by a region formed of a p-type semiconductor, another region formed of an n-type semiconductor, and an intrinsic semiconductor sandwiched between those two regions.

However, Hamakawa et al. ("Hamakawa") discloses a light sensor that includes a pin structure formed by a region formed of a p-type semiconductor, another region formed of an n-type semiconductor, and an intrinsic semiconductor sandwiched between those two regions (For Example: See Abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Nippon to include a light sensor that includes a pin structure formed by a region formed of a p-type semiconductor, another region formed of an n-type semiconductor, and an intrinsic semiconductor sandwiched between those two regions as disclosed in Hamakawa because it aids in providing the ability to separate color components (For Example: See Column 1 Lines 40-57).

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Additionally, since Nippon and Hamakawa are both from the same field of endeavor method the purpose disclosed by Hamakawa would have been recognized in the pertinent art of Nippon.

***Conclusion***

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica Lewis whose telephone number is 571-272-1838.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 703-308-7722 for regular and after final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

ML

April 2, 2004



**Mary Wilczewski**  
**Primary Examiner**